

CLAIMS

What is claimed is:

1. A vacuum cleaner, comprising:  
5 a chassis;  
a blower housing mounted to the chassis;  
an inlet housing removably affixed to the blower housing; and  
a baseplate affixed to the chassis and including an access aperture formed in the  
baseplate, wherein the access aperture extends at least partially over the inlet  
10 housing and wherein the inlet housing can be accessed through the access aperture.
2. The vacuum cleaner of claim 1, wherein the blower housing can also be accessed  
through the access aperture.
- 15 3. The vacuum cleaner of claim 1, wherein the access aperture further extends at least  
partially over the blower housing.
4. The vacuum cleaner of claim 1, wherein the access aperture is of a size and shape to  
allow the inlet housing to be removed from the chassis.  
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5. The vacuum cleaner of claim 1, wherein the access aperture is of a size and shape to  
allow an impeller to be removed from the blower housing and from the chassis.
6. The vacuum cleaner of claim 1, wherein the baseplate is removably affixed to the  
25 chassis.
7. The vacuum cleaner of claim 1, wherein the blower housing includes a motor and an  
impeller removably attached to the motor by a retainer nut.
- 30 8. The vacuum cleaner of claim 1, wherein the blower housing includes a motor and an  
impeller removably attached to the motor by a biasing retainer.

9. The vacuum cleaner of claim 1, further comprising:

a door including open and closed positions, with the door substantially blocking the  
access aperture when in the closed position; and

two or more fastener devices that removably affix the door to the baseplate when the

5 door is in the closed position.

10. A vacuum cleaner, comprising:

a chassis;

a blower housing mounted to the chassis;

an inlet housing removably affixed to the blower housing;

5 a baseplate affixed to the chassis and including an access aperture formed in the baseplate, wherein the access aperture extends at least partially over the inlet housing and wherein the inlet housing can be accessed through the access aperture; a door including open and closed positions, with the door substantially blocking the access aperture when in the closed position; and  
10 two or more fastener devices that removably affix the door to the baseplate when the door is in the closed position.

11. The vacuum cleaner of claim 10, with a particular fastener of the two or more fastener devices comprising:

15 two slots formed in the baseplate; a substantially cylindrical tube extending at least partially along an edge of the door; and an axle passing through the tube and positioned in the two slots; wherein the axle snaps into the slot and the axle is free to rotate in either the slot or in the tube.

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12. The vacuum cleaner of claim 10, wherein a particular fastener of the two or more fastener devices comprises a blade and a fastener aperture formed in the baseplate, wherein the blade passes through and engages the fastener aperture when the door is substantially closed against the baseplate.

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13. The vacuum cleaner of claim 10, wherein the two or more fasteners comprise a tab and one or more holes in the door and one or more corresponding holes in the baseplate, wherein the tab engages and fits under an edge of the access aperture of the baseplate and one or more screws pass through the door and the baseplate through the one or more holes.

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14. The vacuum cleaner of claim 10, further comprising one or more finger depressions formed in the door.

15. The vacuum cleaner of claim 10, further comprising a belt holder feature formed in the door.

5 16. The vacuum cleaner of claim 10, wherein the blower housing can also be accessed through the access aperture.

17. The vacuum cleaner of claim 10, wherein the access aperture further extends at least partially over the blower housing.

10 18. The vacuum cleaner of claim 10, wherein the access aperture is of a size and shape to allow the inlet housing to be removed from the chassis.

19. The vacuum cleaner of claim 10, wherein the access aperture is of a size and shape to allow an impeller to be removed from the blower housing and from the chassis.

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20. The vacuum cleaner of claim 10, wherein the baseplate is removably affixed to the chassis.

20 21. The vacuum cleaner of claim 10, wherein the blower housing includes a motor and an impeller removably attached to the motor by a retainer nut.

22. The vacuum cleaner of claim 10, wherein the blower housing includes a motor and an impeller removably attached to the motor by a biasing retainer.

23. A vacuum cleaner fan unit, comprising:  
a blower housing adapted to receive an impeller;  
an inlet housing including an inlet conduit portion and with the inlet housing closing the  
blower housing when the inlet housing is assembled to the blower housing; and  
5 a bearing washer positioned between the blower housing and the inlet housing, with the  
bearing washer providing a substantially air-tight seal between the blower housing  
and the inlet housing.
24. The fan unit of claim 23, wherein the bearing washer is compressible.
- 10 25. The fan unit of claim 23, wherein the bearing washer is formed of felt.
26. The fan unit of claim 23, wherein the bearing washer fits over one or more ribs  
formed on the inlet housing, with the one or more ribs holding the bearing washer to the inlet  
15 housing and substantially preventing rotation of the bearing washer on the inlet housing.
27. The fan unit of claim 23, with the bearing washer comprising:  
a substantially circular disc having a thickness, an outer diameter, and an inner aperture  
of an inner diameter, with the disc being formed of a compressible material; and  
20 one or more cutouts positioned along the inner aperture and adapted to receive alignment  
ribs of the inlet housing.

28. An inlet housing adapted for a vacuum cleaner fan unit, the inlet housing comprising:  
a bearing face adapted to receive a bearing washer that is positioned between the inlet  
housing and the blower housing when the inlet housing is assembled to the blower  
housing;
- 5 an inlet conduit portion extending from the inlet housing and admitting an airflow;  
a slide flange formed on an end of the inlet conduit portion, with the slide flange  
including at least one rib; and  
a slide block that slides into and engages the slide flange and further slides into and  
engages the chassis, with the slide block including at least one groove corresponding  
10 to the at least one rib of the slide flange and wherein when the slide block slides into  
and engages the slide flange the at least one rib engages the at least one groove,  
wherein the slide block removably affixes the inlet housing to the chassis at a first  
location.
- 15 29. The inlet housing of claim 28, wherein the at least one rib is formed on an inner edge  
of the inlet conduit portion.
30. The inlet housing of claim 28, further comprising a fastener aperture extending at  
least partially through the slide flange and a fastener slot formed in the slide block, with the  
20 fastener aperture and the fastener slot being adapted to receive a fastener that engages the  
fastener aperture and the fastener slot in order to removably affix the slide flange to the slide  
block.
31. The inlet housing of claim 28, further comprising a pair of co-located ears that are  
25 adapted to receive a fastener that engages the chassis and removably affixes the inlet housing  
to the chassis at a second location away from the first location.

32. The inlet housing of claim 28, with the slide block further comprising:

a substantially central aperture that extends through the slide block;

a chassis portion including at least two grooves formed on an outer surface of the chassis portion, with the at least two grooves adapted to engage the chassis; and

5 an inlet portion including the at least one groove formed on an outer surface of the inlet portion, wherein the slide block inlet portion slides at least partially into the slide flange of the inlet housing and the at least one groove of the slide block inlet portion slidably engages the at least one rib of the inlet housing.

33. A bearing washer adapted to fit between an inlet housing and a blower housing of a vacuum cleaner fan unit, the bearing washer comprising:

a substantially circular disc having a thickness, an outer diameter, and an inner aperture of an inner diameter, with the disc being formed of a compressible material; and

one or more cutouts positioned along the inner aperture and adapted to receive alignment ribs of the inlet housing.

34. The bearing washer of claim 33, wherein the bearing washer is compressible.

35. The bearing washer of claim 33, wherein the bearing washer is formed of felt.

36. The bearing washer of claim 33, wherein the bearing washer fits over one or more ribs formed on the inlet housing, with the one or more ribs holding the bearing washer to the inlet housing and substantially preventing rotation of the bearing washer on the inlet housing.

37. The bearing washer of claim 33, further comprising a bevel on a blower housing face, with the bevel adapted to mate with a corresponding projection on a blower housing bearing surface.